



Characterization and Monitoring Technology Vendor Information Form (VIF) Version 4.0

To be completed for participation in the

Search Engine Linking Environmental Characterization and Treatment Technologies (Tech SELECTT)

Note: Instead of submitting this form, you may provide information on your technology(ies) electronically. The VIF can be completed on-line at www.ttemi.com/techselectt. An electronic VIF can be downloaded from EPA's CLU-IN web site (www.clu-in.com). Or you may call the VISITT/Vendor FACTS help line to request a hard copy.

*Completion of this form is voluntary. If you
have any questions, call the Tech SELECTT
Help Line at (800) 245-4505 or (703) 287-8927*

Form Approved
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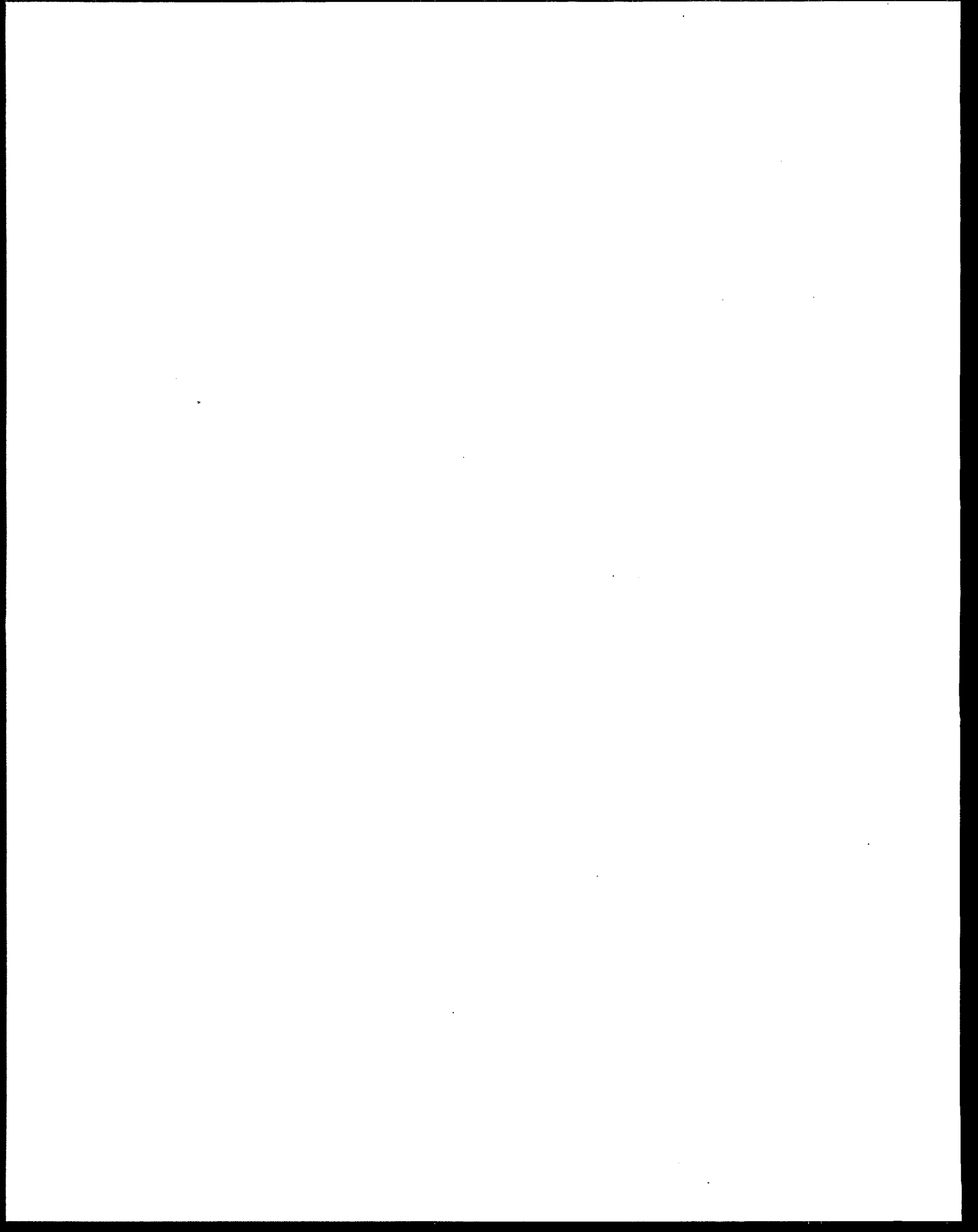


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I. What is the Search Engine Linking Environmental Characterization and Treatment Technologies?

The Search Engine Linking Environmental Characterization and Treatment Technologies (Tech SELECTT) is a service offered by the U.S. Environmental Protection Agency's (EPA) Technology Innovation Office (TIO) to promote the use of technologies for the treatment, characterization or monitoring of contaminated sites. The predecessor systems Vendor FACTS Version 3.0 (154 technologies provided by 116), and VISITT Version 6.0, (371 technologies provided by 214 vendors) were released in January 1998. The purpose of Tech SELECTT is to foster communication between technology vendors and users by providing information on the availability, performance, and cost associated with the application of these technologies. Tech SELECTT is intended to inform Federal, state, and private-sector remediation professionals of their treatment, characterization and monitoring options and the capabilities of the firms listed in the system's database to provide remediation services.

II. Which Technologies are Eligible for Inclusion?

By this Vendor Information Form (VIF), EPA is inviting technology developers and vendors to submit information on specific categories of technologies for participation in Version 1.0 of Tech SELECTT. EPA has chosen these categories because it believes they represent the greatest potential for streamlining the site characterization or monitoring processes. Technologies meeting the following criteria will be included in Tech SELECTT:

1. Fieldable technologies: portable or transportable equipment for on-site monitoring, screening, and analysis of hazardous substances. Stand alone modeling software used in the field to facilitate or expedite the site characterization process (i.e., site characterization modeling software) will also be included in the database.
2. Technologies that fall in one of the categories listed in Table 1.1 on the following page.

The following categories of technologies are not eligible for inclusion in the database: Technologies for monitoring or characterizing industrial process waste streams; general purpose software to manipulate data as part of a site characterization technology listed in Table 1.1; radioactivity sensors, fixed-based (off-site) analytical equipment; remote sensors operated from aircraft or satellite platforms (e.g., multispectral scanners); and technologies that have minor improvement over established technologies.

Technologies of interest include those at any stage of development (e.g. mature, or pre-commercial); however, we prefer information on technologies that can be commercialized, rather than those used only in academic research. EPA may consider additional types of technologies in future versions depending on feedback from users. Please send a one page description of suggested new technologies to the address listed in Section VII.

Table 1.1
LIST OF CHARACTERIZATION AND MONITORING TECHNOLOGIES
OF INTEREST

<u>Analytical</u>	<u>Geophysical</u>
Acoustic Wave Chemical Sensors	Ground Penetrating Radar
Air Measurement (Weather Measurement Technologies Excluded)	Electromagnetic
Analytical Detectors (Stand Alone Only)	Magnetometry
Biosensors	Seismic Reflection/Refraction
Chemical Reaction-Based Indicators (Colormetric)	Resistivity/Conductivity
Electrochemical-based Detectors	
Fiber Optic Chemical Sensors	<u>Sampling or Sampler Emplacement</u>
Chromatography	Air/Gas Sampling Technologies
Immunoassays	Bio-uptake Sampling
Infrared Monitors	Multimedia Sampling (Ex: Wipe Sampling)
Spectroscopy	Surface Sampling
Mass Spectroscopy (may include GC/MS)	Soil Sampling Technologies
Soil Gas Analyzer Systems	Product Sampling Technologies
X-Ray Fluorescence Analyzers	Water Sampling Technologies
<u>Extraction (chemical)</u>	
Analytical Traps	
Supercritical Fluid Extraction	
Solid Phase Extraction	
Thermal Desorption	

III. Why Should You Participate?

Tech SELECTT is an excellent opportunity for vendors to promote their capabilities. The system allows the vendor to provide substantial information on the applicability, cost, performance, and current use of their technologies. The database will be publicly available free-of-charge on the Internet. We anticipate reaching cleanup personnel and investors throughout the U.S. and abroad by widely advertising Tech SELECTT in trade journals, at conferences, and through direct mailings to an extensive list of potential users.

IV. Should Confidential Business Information Be Submitted?

No. Submittal of technology information for inclusion in Tech SELECTT is voluntary, and submittals should not include confidential business information. However, applicants may write "available on a case-by-case basis" as their response to those questions for which they have information, but would prefer not to make this information generally available.

For confidential projects that otherwise could not be included, applicants are encouraged to provide "sanitized" or masked information that will allow users to review general information on a vendor's experience, without revealing confidential information. For instance, in Part 5, which details project experience, you may provide a generic industry name, such as "organic chemical manufacturer" instead of the actual site name.

V. Submittal of Process Flow Diagrams, Schematics or Pictures

Vendors should provide a flow chart, schematic or picture of the monitoring or measurement process or equipment. To ensure that schematics are legible in the final system, EPA recommends that schematics be submitted in an Encapsulated Postscript (EPS), Bitmap (BMP), Tag Image File (TIF) or Zsoft PC Paintbrush Bitmap (PCX) electronic format. If no electronic copy is available, a camera-ready hard copy suitable for computer scanning is acceptable.

VI. How Much Documentation is Required Regarding Performance and Other Technology Claims?

The characterization and monitoring technology portion of Tech SELECTT is a service provided by EPA to showcase vendor's technologies and capabilities. Therefore, it is in the applicant's best interest to fill out each part of VIF as completely as possible since incomplete information may discourage users from considering the technology further.

EPA will review each submittal for clarity, completeness, and adherence to instructions and may contact vendors to clarify information submitted. If the Agency makes any substantive changes to the submittal the respondent will be given the opportunity to review and comment, with one exception: EPA may list publicly-available information or references on Superfund sites or Federal facilities at which the vendor's technology has been used.

The Agency will not review submitted data for accuracy or quality; to do so would be too resource intensive and subjective, and would substantially delay dissemination of the database. Tech SELECTT will clearly state that vendors have supplied the information, and that the data have not been verified by the Agency. Applicants should expect that interested users may request additional information regarding applicability and performance of a particular monitoring or measurement technology. The database will contain the following disclaimer:

"Inclusion in the U.S. Environmental Protection Agency's Tech SELECTT database does not mean that the Agency approves, recommends, licenses, certifies, or authorizes the use of any of the technologies. Nor does the Agency certify the accuracy of the data. This listing means only that the vendor has provided information on a technology that EPA considers to be eligible for inclusion in this database."

VII. Submittal of Vendor Information Form

Instead of submitting this form, it is recommended that you use the on-line VIF at www.ttemi.com/techselectt for submitting your technology for inclusion in the Tech SELECTT. However, there are several other ways you may provide information on your technology(ies). The VIF can be downloaded from the Tech SELECTT home page at www.ttemi.com/techselectt or from the EPA's Cleanup Information (CLU-IN) web site at www.clu-in.com. You can also obtain the VIF by electronic mail. Send your request to vfacts@ttemi.com. A hard copy of the VIF can be obtained by calling the Tech SELECTT help line at (800) 245-4505. The VIF may also be handwritten and submitted to the address below.

System Operator, Tech SELECTT
Tetra Tech EM, Inc.
7932 Nieman Road
Lenexa, KS 66214

VIII. EPA's Authority for Submittal and Burden Statement

EPA's authority for conducting this invitation for submittals is Section 311 of the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601 et seq.). Under Section 311, EPA may collect and disseminate information related to the use of monitoring and measuring technologies for the detection of hazardous substances at hazardous waste sites.

EPA estimates that the vendor reporting burden for this collection of information will average 25 hours per respondent for one original submittal and 13 hours for submittal of an update. These estimates include the time applicants will require to review and maintain the data needed, and to complete and review the VIF. Comments about this estimate of burden, or any other issue or concern related to reduction of the burden, should be sent to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460 and to Paperwork Reduction Project (OMB #2050-0114), Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

**IX. CHARACTERIZATION
AND MONITORING TECHNOLOGIES FOR
TECH SELECTT (FORMERLY Vendor FACTS)**

**CHARACTERIZATION AND MONITORING TECHNOLOGY
VENDOR INFORMATION FORM 4.0**

PART 1: GENERAL INFORMATION

Part 1 contains questions about general information on your company. Part 1 must be completed for a technology to be included in Tech SELECTT.

1.1 Date Submitted _____ / _____ / _____

1.2 Developer/Vendor Name _____

1.3a Is this an update of a technology listed in Vendor FACTS Version 3.0? Yes ☐ No ☐

If yes, specify technology and vendor name that appeared in Vendor FACTS Version 3.0 if different from the information in this update.

For Vendor FACTS Version 3.0 Vendors: Questions 1.3b and 1.3c are intended to gather information on the use of Vendor FACTS in the remediation community.

1.3b Please provide an estimate of the frequency of inquiries your company has received through your inclusion in Vendor FACTS. _____ (value) _____ (unit)

1.3c Has your company performed work, such as a treatability study, pilot-scale study, or field demonstration, as a result of those inquiries. ☐ Yes ☐ No

Please provide details, if possible. _____

1.4. Please list your primary Standard Industrial Classification (SIC) code and check the appropriate business classification for each code. Refer to Appendix A for business classification definitions.

SIC code _____ ☐ Small ☐ Other Than Small ☐ Disadvantaged/Minority ☐ Women-owned
SIC code _____

1.5 Street Address _____

Vendor Name _____
Technology Type _____

PART 1: GENERAL INFORMATION (continued)

1.6 City _____

1.7 State/Province _____

1.8 Zip Code _____

1.9 Country _____

1.10 a. Contact Name(s) Prefix: _____ First Name: _____

Last Name: _____ Suffix: _____

b. Contact Title(s) _____

1.11 Contact Phone () _____ - _____ ext. _____

1.12 Fax Number () _____ - _____

1.13 Internet E-mail Address _____

1.14 Home Page Address _____

PART 2: TECHNOLOGY OVERVIEW

Part 2 asks questions about the technology type, trade name, patent information, technology description, highlights, limitations, media monitored, monitoring targets as well as other general questions related to a vendor's technology. Part 2 must be completed for a technology to be included in Tech SELECTT.

2.1 Vendor Services. Check all that apply.

- ☐ Equipment manufacturer
- ☐ Subcontractor for characterization, monitoring, or measurement
- ☐ Prime contractor for full-service characterization, monitoring, or measurement
- ☐ Technology sales
- ☐ Technology rentals or leases
- ☐ Other (specify) _____

2.2 Technology Type. Check one only. Fill out a separate form for each additional technology.

Analytical

- ☐ Acoustic Wave Chemical Sensors
- ☐ Air Measurement (Weather Measurement Technologies Excluded)
- ☐ Analytical Detectors (Stand Alone Only)
- ☐ Biosensors
- ☐ Chemical Reaction-Based Indicators (Colormetric)
- ☐ Spectroscopy
- ☐ Fiber Optic Chemical Sensors
- ☐ Chromatography
- ☐ Immunoassays
- ☐ Infrared Monitors
- ☐ Mass Spectroscopy (may include GC/MS)
- ☐ Soil Gas Analyzer Systems
- ☐ X-Ray Fluorescence Analyzers
- ☐ Electrochemical-based Detectors

Extraction (chemical)

- ☐ Analytical Traps
- ☐ Supercritical Fluid Extraction
- ☐ Solid Phase Extraction
- ☐ Thermal Desorption

Geophysical

- ☐ Ground Penetrating Radar
- ☐ Electromagnetic
- ☐ Seismic Reflection/Refraction
- ☐ Resistivity/Conductivity
- ☐ Magnetometry

Indicate the intended use of your geophysical technology.

- ☐ Surface
- ☐ Borehole
- ☐ Direct-push

Sampling or Sampler Emplacement

- ☐ Air/Gas Sampling Technologies
- ☐ Water Sampling Technologies
- ☐ Soil Sampling Technologies
- ☐ Product Sampling Technologies
- ☐ Multimedia Sampling
- ☐ Surface Sampling
- ☐ Bio-uptake Sampling

Other: _____

Vendor Name _____
Technology Type _____

PART 2: TECHNOLOGY OVERVIEW (continued)

2.3 Trade Name or Model Number Assigned By Vendor *(if different than name listed in Question 2.2).*

2.4 Is this a registered trademark? ☐ Yes ☐ No

2.5 Does the vendor hold an exclusive license? ☐ Yes ☐ No

2.6 Patents

a. Is technology patented? ☐ Yes ☐ No

b. Is patent pending? ☐ Yes ☐ No

2.7 Technology Scale. *Check only one.* Using the following definitions, indicate the operational status of the technology.

a. ☐ **Full scale.** Available equipment is sized and commercially available for actual monitoring or measurement.

b. ☐ **Pilot scale.** Available equipment is of sufficient size to verify technology feasibility or establish the design and operating conditions for a full-scale system. However, it is not of the size typically used for a commercially available system.

2.8 Is this technology being tested, or has this technology been tested, in EPA **Superfund Innovative Technology Evaluation (SITE) Characterization and Monitoring Program**?

☐ Yes ☐ No

EPA Project Manager: _____

SITE Document Number(s): _____

2.9 Is this technology in the **Consortium for Site Characterization Technology's (CSCT)** verification program:

☐ Yes ☐ No

Contact Name: _____

Contact Phone: _____

Document or Reference Number: _____

Vendor Name _____
Technology Type _____

PART 2: TECHNOLOGY OVERVIEW (continued)

2.10 Other Verification Program: _____

Contact Name: _____

Contact Phone: _____ \

Document or Reference Number: _____ \

2.11 What is the intended use of your technology?

☐ Analytical Measurement

☐ Health and Safety Monitoring

☐ Site Mapping

☐ Physical Characterization

☐ Leak/Leachate Detection

☐ Sample Collection

☐ Other: _____

2.12 Equipment is (*check one only*)

☐ Portable (hand-held)

☐ Transportable

PART 2: TECHNOLOGY OVERVIEW (continued)

- 2.13 Description of Technology.** In 300 words or less, describe the monitoring/measurement device or technology, including scientific principles on which the technology is based; whether the system is continuous, on-demand, or single measurement; and whether the technology is transportable or portable. Part 3 allows more detail for technology-specific information. Part 4 allows more detail for equipment capabilities and performance. **Provide a flow chart or schematic of the treatment process, showing the equipment necessary for each step. To ensure the schematics are legible in the final system, EPA recommends that schematics be submitted in an Encapsulated Postscript (EPS) Bitmap (BMP), Tag Image File (TIF) or Zsoft PC Paintbrush Bitmap (PCX) electronic format. If an electronic copy is not available, a camera-ready hard copy suitable for computer scanning can be submitted as an alternative.**

EXAMPLE

Description of Technology

ABC Corporation has developed an innovative detector for fluorescing analytes in water using fiber optics. This sensor, which exists as a detector on a cone penetrometer or as permanent monitor, uses a fiber optic bundle to transmit laser energy as well as to detect resultant fluorescence analytes such as pesticides. The returned spectra is automatically compared to a spectral library resident in a personal computer to distinguish the type of pesticide, etc.

When used as an in situ monitor, the fiber optic bundle is left in place in a small diameter screened PVC casing. At the surface, the end of the fiber optic bundle is protected in a small case mounted on the PVC, or other casing. Readings are made by attaching the fiber optic connector to the receptacle on a portable fluorimeter making a few adjustments to maximize output strength. After transduction, the signal is stored and analyzed within the PC.

PART 2: TECHNOLOGY OVERVIEW (continued)

- 2.14 **Technology Highlights.** In 200 words or less, describe the key marketable features of the technology in terms of parameters measured, performance, implementation, or cost. Include highlights such as monitoring niche and advantages over other technologies.

EXAMPLE

Technology Highlights

The SUPER sensor can operate in a wide range of subsurface conditions from 60% saturation in the vadose zone, to below the water table, and up to 200 ft. in depth. The measurable contaminant range is from under 10 ppb to pure product; while differentiation concentration ranges from 50 ppb through pure product. When used as a sensor on a cone penetrometer, continuous readings can be recorded at rates of 1 ft./min. and detection limits of 30 ppb. Full specification can be accomplished by stopping for no more than 20 seconds.

The SUPER sensor can identify and quantify PAH's, pesticides, and BTEX. Once system hardware and software are configured, there is virtually no cost for subsequent analyses. As a left-in-place monitor (which connects to portable instruments) each installation costs from \$50 - \$150. The use of a cone penetrometer eliminates the need for slow and costly conventional drilling and well installation.

PART 2: TECHNOLOGY OVERVIEW (continued)

- 2.15 Technical Limitations.** In 200 words or less, describe the technical limitations, such as specific contaminants, site conditions, and waste preparation that could adversely affect applicability or performance.

EXAMPLE

Technology Limitations

The SUPER sensor relies on the ability of a target compound to fluorescence, which currently limits detection to those compounds mentioned. An additional problem can exist where two compounds have fluorescence spectra which are close to each other; in this case differentiation between the two may not be possible. Minor problems can exist in the presence of humic acids which cause interferences; however, this can be alleviated through preliminary chemical analysis and subsequent calibration. Due to transmission losses, the maximum length of the fiber bundle is limited to 200 feet when used as an in situ monitor. When used as a portable monitoring device where the fiber bundle is frequently handled, a more flexible bundle is generally used which has greater transmission loss limiting maximum depth to 125 feet.

PART 2: TECHNOLOGY OVERVIEW (continued)

- 2.16 Other Comments.** In 200 words or less, provide additional technology information, such as technology history, status, capabilities, experience, and applicable permits obtained (e.g., TSCA or RCRA). Also describe plans for future development of the technology, including diversification of media and/or contaminants monitored.

EXAMPLE

Other Comments

The SUPER sensor has been successfully used in the monitoring mode on five hazardous waste sites and was shown to compare favorably with results of traditional analytical methods. As there currently exist cone penetrometer systems using fiber optics and sapphire windows (which are essentially the same as the SUPER system requirements), adaptation to a penetrometer system is not anticipated to degrade results. The SUPER cone penetrometer system is anticipated for fielding in May of 1999.

PART 2: TECHNOLOGY OVERVIEW (continued)

2.17 Media monitored or characterized. Check "actual" for all media that has been monitored or characterized using your technology. Check "potential" for all media to which the technology may be applied in the future.

Actual Potential

<input type="checkbox"/>	<input type="checkbox"/>	Soil (in situ)
<input type="checkbox"/>	<input type="checkbox"/>	Soil (ex situ)
<input type="checkbox"/>	<input type="checkbox"/>	Sludge (Does not include municipal sewage sludge.)
<input type="checkbox"/>	<input type="checkbox"/>	Solid (for example, slag)
<input type="checkbox"/>	<input type="checkbox"/>	Saturated sediment (in situ)
<input type="checkbox"/>	<input type="checkbox"/>	Saturated sediment (ex situ)
<input type="checkbox"/>	<input type="checkbox"/>	Soil Gas
<input type="checkbox"/>	<input type="checkbox"/>	Air particulates and aerosols
<input type="checkbox"/>	<input type="checkbox"/>	Air vapors
<input type="checkbox"/>	<input type="checkbox"/>	Leachate (in situ)
<input type="checkbox"/>	<input type="checkbox"/>	Surface Water (in situ)
<input type="checkbox"/>	<input type="checkbox"/>	Groundwater (in situ) [Includes measurement of ground water and/or saturated soil.]
<input type="checkbox"/>	<input type="checkbox"/>	Aqueous Sample (ex situ) (includes ex situ samples of groundwater or surface water, leachate, or waste water from a hazardous waste site)
<input type="checkbox"/>	<input type="checkbox"/>	Dense nonaqueous phase liquids (DNAPL) [in situ]
<input type="checkbox"/>	<input type="checkbox"/>	Light nonaqueous phase liquids (LNAPL) [in situ]
<input type="checkbox"/>	<input type="checkbox"/>	Multimedia
<input type="checkbox"/>	<input type="checkbox"/>	Other (specify) _____

PART 2: TECHNOLOGY OVERVIEW (continued)

2.18 Monitoring Targets. Check all that may apply. Check "actual" for all that have been monitored or characterized by your technology (that is, data exist). Check "potential" for all that the technology may be applied to in the future. Data for actual contaminants monitored or measured should be included in *Part 4*, Equipment Capabilities and Performance (see Appendix B for key to contaminant groups).

Chemical

Actual Potential

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Halogenated volatiles |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogenated semivolatiles |
| <input type="checkbox"/> | <input type="checkbox"/> | Nonhalogenated volatiles |
| <input type="checkbox"/> | <input type="checkbox"/> | Nonhalogenated semivolatiles |
| <input type="checkbox"/> | <input type="checkbox"/> | Organic pesticides/herbicides |
| <input type="checkbox"/> | <input type="checkbox"/> | Dioxins/furans |
| <input type="checkbox"/> | <input type="checkbox"/> | PCBs |
| <input type="checkbox"/> | <input type="checkbox"/> | Polynuclear aromatic hydrocarbons (PAHs) |
| <input type="checkbox"/> | <input type="checkbox"/> | Solvents |
| <input type="checkbox"/> | <input type="checkbox"/> | Benzene-toluene-ethylbenzene-xylene (BTEX) |
| <input type="checkbox"/> | <input type="checkbox"/> | Acetonitrile (organic cyanide) |
| <input type="checkbox"/> | <input type="checkbox"/> | Organic corrosives |
| <input type="checkbox"/> | <input type="checkbox"/> | BOD/COD |
| <input type="checkbox"/> | <input type="checkbox"/> | Chemical/biological warfare agents |
| <input type="checkbox"/> | <input type="checkbox"/> | Gases |
| <input type="checkbox"/> | <input type="checkbox"/> | Total Petroleum Hydrocarbons (TPH) |

Actual Potential

- | | | |
|--------------------------|--------------------------|--------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Heavy metals |
| <input type="checkbox"/> | <input type="checkbox"/> | Nonmetallic toxic elements |
| <input type="checkbox"/> | <input type="checkbox"/> | Radioactive metals |
| <input type="checkbox"/> | <input type="checkbox"/> | Asbestos |
| <input type="checkbox"/> | <input type="checkbox"/> | Inorganic cyanides |
| <input type="checkbox"/> | <input type="checkbox"/> | Inorganic corrosives |
| <input type="checkbox"/> | <input type="checkbox"/> | Explosives/propellants |
| <input type="checkbox"/> | <input type="checkbox"/> | Organometallic pesticides/herbicides |
| <input type="checkbox"/> | <input type="checkbox"/> | Other (specify) _____ |

Physical

Actual Potential

- | | | |
|--------------------------|--------------------------|----------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Water Table |
| <input type="checkbox"/> | <input type="checkbox"/> | Soil Types |
| <input type="checkbox"/> | <input type="checkbox"/> | Bedrock Stratigraphy |
| <input type="checkbox"/> | <input type="checkbox"/> | Resistivity |
| <input type="checkbox"/> | <input type="checkbox"/> | Conductivity |

Actual Potential

- | | | |
|--------------------------|--------------------------|------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Buried Ferrous Materials |
| <input type="checkbox"/> | <input type="checkbox"/> | Buried Non Ferrous Materials |
| <input type="checkbox"/> | <input type="checkbox"/> | Soil Moisture |
| <input type="checkbox"/> | <input type="checkbox"/> | Temperature |
| <input type="checkbox"/> | <input type="checkbox"/> | pH/Corrosivity |
| <input type="checkbox"/> | <input type="checkbox"/> | Other (specify) _____ |

Vendor Name _____
Technology Type _____

PART 2: TECHNOLOGY OVERVIEW (continued)

2.19 Industrial Waste Sources or Site Types. *Check all that may apply.* Check "actual" for all waste sources or site types on which your technology has been or is currently capable of being used. Check "potential" for all waste sources or site types that the technology may be applied to in the future. See Table 2.1 for wastes typically associated with each industry.

Actual	Potential	Actual	Potential
<input type="checkbox"/>	<input type="checkbox"/> Agriculture	<input type="checkbox"/>	<input type="checkbox"/> Munitions manufacturing
<input type="checkbox"/>	<input type="checkbox"/> Battery recycling/disposal	<input type="checkbox"/>	<input type="checkbox"/> Paint/ink formulation
<input type="checkbox"/>	<input type="checkbox"/> Chloro-alkali manufacturing	<input type="checkbox"/>	<input type="checkbox"/> Pesticide manufacturing/use
<input type="checkbox"/>	<input type="checkbox"/> Coal gasification	<input type="checkbox"/>	<input type="checkbox"/> Petroleum refining and reuse
<input type="checkbox"/>	<input type="checkbox"/> Dry cleaning	<input type="checkbox"/>	<input type="checkbox"/> Photographic products
<input type="checkbox"/>	<input type="checkbox"/> Electroplating	<input type="checkbox"/>	<input type="checkbox"/> Plastics manufacturing
<input type="checkbox"/>	<input type="checkbox"/> Gasoline service station/petroleum storage facility	<input type="checkbox"/>	<input type="checkbox"/> Pulp and paper industry
<input type="checkbox"/>	<input type="checkbox"/> Herbicide manufacturing/use	<input type="checkbox"/>	<input type="checkbox"/> Other organic chemical manufacturing
<input type="checkbox"/>	<input type="checkbox"/> Industrial landfills	<input type="checkbox"/>	<input type="checkbox"/> Other inorganic chemical manufacturing
<input type="checkbox"/>	<input type="checkbox"/> Inorganic/organic pigments	<input type="checkbox"/>	<input type="checkbox"/> Semiconductor manufacturing
<input type="checkbox"/>	<input type="checkbox"/> Machine shops	<input type="checkbox"/>	<input type="checkbox"/> Rubber manufacturing
<input type="checkbox"/>	<input type="checkbox"/> Medical wastes	<input type="checkbox"/>	<input type="checkbox"/> Wood preserving
<input type="checkbox"/>	<input type="checkbox"/> Metal ore mining and smelting	<input type="checkbox"/>	<input type="checkbox"/> Uranium mining
<input type="checkbox"/>	<input type="checkbox"/> Municipal landfill	<input type="checkbox"/>	<input type="checkbox"/> Other (specify) _____

PART 2: TECHNOLOGY OVERVIEW (continued)

Table 2.1
Contaminants/Wastes Associated With Industrial Waste
Sources or Types of Sites

Agriculture	: Pesticides
Battery recycling/disposal	: Lead (acid)
Chloro-alkali manufacturing	: Chlorine compounds, mercury
Coal gasification	: PAHs
Dry cleaning	: Solvents
Electroplating	: Chrome, metals
Herbicide manufacturing/use	: Pesticides
Industrial landfills	: Wastes from Multiple Sources
Inorganic/organic pigments	: Solvents, chrome, zinc
Machine shops	: Metals, oils
Metal ore mining and smelting	: Metals
Municipal landfills	: Wastes from multiple sources
Munitions manufacturing	: Explosives, lead
Paint/ink formulation	: Solvents, some metals (chrome, zinc)
Pesticide manufacturing/use	: Pesticides
Petroleum refining and reuse	: Petroleum, hydrocarbons, BTEX
Photographic products	: Silver, bromide, solvent
Plastics manufacturing	: Polymers, phthalates
Pulp and paper industry	: Chlorinated organics, dioxins
Other organic chemical manufacturing	: Organics, metals (used as catalyst)
Other inorganic chemical manufacturing	: Inorganics, metals
Semiconductor manufacturing	: Degreasing agents (solvents), metals
Rubber manufacturing	: Rubber, plastics, polymers, organics
Wood preserving	: Creosote, PCP, arsenic, chrome, PAHs
Uranium mining	: Uranium, radioactive metals

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS

Part 3 asks questions related to the specific details of a vendor's technology. Part 3 must be completed for a technology to be included in Tech SELECTT.

- 3.1 **Major Method Processes.** In 300 words or less, describe the standard operating procedures of your system, including a list of operating steps. Provide more detail than you did in Question 2.13.

EXAMPLE

Major Unit Processes

Full-scale equipment consists of a 20 ton truck in which are contained the hydraulics, penetrometer sections, controls, computers, spectrofluorimeter, and personnel. Penetrometer sections are standard 3 ft. by 1.75 in. diameter with the head tipped with a hardened steep tip. The cone section contains sensors for tip resistance and sliding friction as well as containing a sapphire window-protected sensor with an insulated fiber optic bundle leading to system equipment. This system is advanced hydraulically in three-foot increments to depths up to 300 ft. in unconsolidated material. The following are standard steps involved in using the device in full-scale operation:

1. Prior to use, site-specific soil samples and lab standards of known contaminant values are used to calibrate the SUPER system.
2. System integrity checks are performed.
3. The apparatus is assembled as the penetrometer is advanced through the bottom of the truck.
4. The penetrometer is steadily driven into the soil at a rate of 1 ft./min. while data is stored and processed by the computer. Data is simultaneously printed on a strip log. Tip and sliding resistance are simultaneously recorded and plotted.
5. Back filling with grout is performed during a second run using a grouting tip with grout emplaced from the bottom.

Vendor Name _____
Technology Type _____

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS (continued)

Physical Dimensions and Shipping Requirements

3.2 List the components included with your system and indicate the dimensions (how much space is needed for each component)?

	Component 1		Component 2		Component 3		Component 4	
Name								
Height		(units)		(units)		(units)		(units)
Width		(units)		(units)		(units)		(units)
Length		(units)		(units)		(units)		(units)
Weight		(units)		(units)		(units)		(units)

3.3 Indicate the shipping requirements of the technology.

☐ Standard Freight

☐ Dangerous Goods

☐ Hazardous Goods

3.4 If dangerous or hazardous goods is checked, please describe any special shipping requirements.

Power Requirements

3.5 Does your technology require one or more of the following power supplies (check all that apply):

☐ Batteries - type: _____

☐ Natural/LP gas

Time required before recharge or replacement

☐ AC 3 phase

_____ (value) _____ (units)

☐ Other (specify) _____

☐ AC 110 V

☐ Power supply is not required

Vendor Name _____
Technology Type _____

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS (continued)

Operation of the field analytical or characterization technology

3.6 a. Reagents/Supplies. Does your technology require the use of reagents or supplies?

☐ Yes ☐ No

b. If yes, please describe the reagents or supplies required. _____

c. If yes, are they

☐ Supplied with instrument package ☐ Purchased separately

d. What is their shelf life? _____ (value) _____ (units)

Note: Costs for reagents/supplies will be addressed later.

3.7 Are the reagents or supplies sensitive to environmental conditions (that is, are environmental controls such as refrigeration required)?

☐ Yes ☐ No

Please describe: _____

Calibration

3.8 Indicate the type and frequency of calibration required (check all that apply).

TYPE

FREQUENCY

☐ One-time, initial calibration is set at the factory

☐ Periodic, calibration is set at the factory _____ (value) _____ (units)

☐ Theoretical, based on literature _____ (value) _____ (units)

☐ Empirical, based on standards _____ (value) _____ (units)

☐ Site specific _____ (value) _____ (units)

☐ Other: _____

3.9 Does the instrument need to be calibrated for each specific contaminant that is analyzed?

☐ Yes ☐ No

Vendor Name _____
Technology Type _____

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS (continued)

Sample Preparation and Preservation

3.10 What sample preparation and preservation is required? (Choose all that apply)

PHYSICAL

☐ Homogenation

☐ Sieving

☐ Grinding

☐ Cooling

☐ Other: _____

CHEMICAL

☐ Sorption (trapping)

☐ Chemical addition

☐ pH adjustment

☐ Other: _____

3.11 Is site preparation required?

☐ Yes

☐ No

3.12 If yes, please describe. _____

Maintenance

3.13 Is routine maintenance required?

☐ Yes

☐ No

Describe routine maintenance: _____

3.14 If yes, who performs routine maintenance?

☐ Vendor

☐ Operator

☐ Other: _____

Residual Wastes

3.15 Does your technology directly or indirectly produce any residual wastes (hazardous or nonhazardous)?

☐ Yes

☐ No

3.16 If yes, how are residual wastes that are produced by your technology managed? _____

Vendor Name _____
Technology Type _____

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS (continued)

3.17 Are disposal costs associated with the waste that is produced?

- ☐ Yes ☐ No ☐ Varies with local regulations

Health and Safety

3.18 What protective equipment or health and safety procedures are required to operate the technology? (check all that apply)

- ☐ Protective clothing, specify: _____
☐ Personnel monitoring
☐ Waste storage
☐ Reagent storage

Other: _____

3.19 List any health and safety issues associated with the equipment. _____

Permit Requirements

3.20 Are users of the technology required to obtain any Federal or State permits, licenses, or certifications for transportation, operation, or ownership of the technology?

- ☐ Yes ☐ No

Type Required:

- ☐ Federal ☐ State ☐ Other

Please list the type of permit required:

Technical Support

3.21 Is special training required and/or provided?

- ☐ Yes, Training Required
☐ No, Training is Not Required, but is provided upon request
☐ No, Training is not required or provided

Vendor Name _____
Technology Type _____

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS (continued)

3.22 If yes, indicate the duration and cost of the training and whether it is conducted on site or off site.

☐ On site ☐ Off site ☐ Negotiable

Duration: _____ (value) _____ (units) Duration: _____ (value) _____ (units)

Cost: _____ Cost: _____

3.23 Quality of technical support. (If an operator is in the field and the instrument breaks down or is not giving quality results, what kind of response can be expected?)

☐ 24 hour hotline

☐ 24 hour answering service - please indicate average response time:

_____ (value) _____ (units)

☐ Regular business hours - please list hours:

_____ AM/PM To _____ AM/PM _____ Time Zone

☐ Service contract

☐ Other: _____

Cost Information

3.24 a. Can your technology be purchased, leased, or rented?

☐ Purchased ☐ Leased ☐ Rented Other: _____

b. If your technology can be purchased for individual use please indicate cost below.

\$ _____ Total cost

c. If your technology can be rented or leased directly please indicate the rental or lease fee below.

\$ _____ (units)

\$ _____ (units)

\$ _____ (units)

Other costs: _____

Vendor Name _____
Technology Type _____

PART 3: EQUIPMENT SPECIFICATIONS AND OPERATIONS (continued)

If you do not lease the equipment directly, can you provide information on third party sources?

☐ Yes ☐ No

d. Does the vendor supply everything necessary to use and obtain data with the rental or purchase of the technology?

☐ Yes ☐ No

e. Please indicate other costs associated with your technology (for example, indicate the cost of reagents if they are required and were not included in the price above). Also indicate the cost of refills or routinely required replacement parts.

_____ (item) \$ _____ per _____ (units)

_____ (item) \$ _____ per _____ (units)

_____ (item) \$ _____ per _____ (units)

3.25 Factors Affecting Unit Price. With "1" the highest, rank any of the following items that will have a significant effect on the unit price. If the technology is in situ, excavation and waste handling cannot affect price. Use each number only once.

_____ Initial contaminant concentration
_____ Sample handling/preprocessing
_____ Turbidity, airborne particulates
_____ Depth to contamination
_____ Depth to ground water
_____ Interfering analytes, volatility

_____ Site preparation
_____ pH, Eh, moisture
_____ Grain size, soil type
_____ Access to power
_____ Labor rates
_____ Detection limit/resolution needed
_____ Other _____

PART 4: EQUIPMENT CAPABILITIES AND PERFORMANCE

Part 4 allows you to describe the specific capabilities and operation of your equipment.

Operating conditions (temperature, moisture, etc.)

- 4.1 Check the matrix and environmental conditions that may affect or interfere with the performance of your technology.

Matrix

- | | |
|---|---|
| <input type="checkbox"/> Soil texture | <input type="checkbox"/> Consolidated or not |
| <input type="checkbox"/> Moisture | <input type="checkbox"/> Permafrost |
| <input type="checkbox"/> Saturated | <input type="checkbox"/> Percent Organic Matter |
| <input type="checkbox"/> Unsaturated (indicate range): _____ To _____ Percent | <input type="checkbox"/> Other: _____ |

Environmental Conditions

- ☐ Temperature (indicate range needed): _____ To _____ °C or °F
- ☐ Rain
- ☐ Daylight
- ☐ Humidity

- 4.2 Can the technology be operated successfully outside (i.e. a controlled environment is not necessary)?

- ☐ Yes ☐ No

Data Type and Interpretation

- 4.3 What type of data does your technology produce? (check all that apply)

- ☐ Qualitative (yes/no, absence or presence)
- ☐ Quantitative (specific number)
- ☐ Semi-quantitative (measurement within range)

PART 4: EQUIPMENT CAPABILITIES AND PERFORMANCE (continued)

4.4 What data manipulation is required and how long does it take to obtain useable results?

- ☐ None, the technology automatically produces useable data.
- ☐ Some data manipulation is required to produce a data point.
- ☐ Data must be entered into a software program that calculates or produces useable data.

Describe the procedure and indicate time requirements: _____

4.5 **Sample Throughput/Measurement Frequency.** Please indicate the sample throughput (that is, how long it takes to generate one useable data point). Throughput is measured by the total time required to obtain the data divided by the total number of data points.

_____ (value) _____ (units)

- ☐ Continuous readout
- ☐ Other (specify) _____

Developmental or Bench-Scale Studies

4.6 a. Can you conduct developmental or bench-scale studies on some types of waste at your location?

- ☐ Yes ☐ No

b. At a contaminated site?

- ☐ Yes ☐ No

4.7 Give the estimated range of quantity or size of target material needed to test the feasibility of this technology.

_____ to _____ (units)

4.8 Estimate total number of bench-scale studies conducted on actual target materials from different sources or sites. Count studies pertaining to the same site once, regardless of the number of different target materials.

PART 4: EQUIPMENT CAPABILITIES AND PERFORMANCE (continued)

Precision and Accuracy

4.9 Specify the maximum measurement precision of the instrument.

_____ (value) _____ (units)

Specify the maximum measurement accuracy of the instrument.

_____ (value) _____ (units)

If the performance of your technology is the same from site to site (that is, it can always achieve the same method detection limit on a contaminant) please complete question 4.10.

If the performance of your technology is site-specific (that is, the quality of the results (data) it produces can vary from site to site) please complete question 5.1

Contaminant of Concern, Method Detection Limit and Operational Range

This section is considered one of the most important by the users of the systems when selecting a characterization or monitoring technology.

4.10 Please indicate the method detection limits (MDL) and range of detection for contaminants of concern in each matrix analyzed?

Vendors should submit data on either contaminant groups or specific contaminants.

Contaminants of Concern	Matrix	Method Detection Limit		Concentration Range	
			(units)		(units)
			(units)		(units)
			(units)		(units)
			(units)		(units)
			(units)		(units)
			(units)		(units)
			(units)		(units)

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Vendor Name _____
Technology Type _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA

Part 5 asks questions about the performance of a vendor's technology. Part 5 is optional; however, EPA encourages vendors to complete as much of the questionnaire as possible.

Complete question 5.1 if the performance of your technology can vary from site to site (that is, it is site-specific).

5.1 List as many as *five* representative projects that also can serve as references. List information for only one project per sheet. For projects that have more than one application, fill out a separate sheet for each application. Provide only the performance data that is specific to each project listed. Commercial projects are of most importance. EPA reserves the right to add information on projects conducted for the federal government of which EPA is aware.

Site Name or Industry Type if Client Identity is Confidential: _____		
Site Type or Waste Source (Check all that apply)		
<input type="checkbox"/> Agriculture <input type="checkbox"/> Battery recycling/disposal <input type="checkbox"/> Chloro-alkali manufacturing <input type="checkbox"/> Coal gasification <input type="checkbox"/> Dry cleaning <input type="checkbox"/> Electroplating <input type="checkbox"/> Gasoline service station/petroleum storage facility <input type="checkbox"/> Herbicide manufacturing/use	<input type="checkbox"/> Industrial landfills <input type="checkbox"/> Inorganic/organic pigments <input type="checkbox"/> Machine shops <input type="checkbox"/> Medical waste <input type="checkbox"/> Metal ore mining and smelting <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Munitions Manufacturing <input type="checkbox"/> Paint/ink formulation <input type="checkbox"/> Pesticide manufacturing/use <input type="checkbox"/> Petroleum refining and reuse <input type="checkbox"/> Photographic products <input type="checkbox"/> Plastics manufacturing	<input type="checkbox"/> Pulp and paper industry <input type="checkbox"/> Other organic chemical manufacturing <input type="checkbox"/> Other inorganic chemical manufacturing <input type="checkbox"/> Semiconductor manufacturing <input type="checkbox"/> Rubber manufacturing <input type="checkbox"/> Wood preserving <input type="checkbox"/> Uranium mining <input type="checkbox"/> Others (specify) _____
Location		
City _____ State/Province: _____ Country _____ Zip Code _____	Application or Project Type (Check all that apply) <input type="checkbox"/> Full-Scale <input type="checkbox"/> Field Demonstration <input type="checkbox"/> Bench-Scale Study <input type="checkbox"/> TSCA National Demonstration <input type="checkbox"/> TSCA Research and Development <input type="checkbox"/> CSCT Verification Program <input type="checkbox"/> EPA SITE Characterization and Monitoring Program <input type="checkbox"/> Research <input type="checkbox"/> Other (specify): _____	
Regulation/Statute/Organization (Check all that apply)		
<input type="checkbox"/> RCRA Corrective Action <input type="checkbox"/> CERCLA <input type="checkbox"/> TSCA <input type="checkbox"/> Safe Drinking Water Act <input type="checkbox"/> UST Corrective Action <input type="checkbox"/> State (specify) _____ <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Not Applicable	Media (Check all that apply) <input type="checkbox"/> Soil (in situ) <input type="checkbox"/> Soil (ex situ) <input type="checkbox"/> Sludge <input type="checkbox"/> Solid <input type="checkbox"/> Natural sediment (in situ) <input type="checkbox"/> Natural sediment (ex situ) <input type="checkbox"/> Air particulates and aerosols <input type="checkbox"/> Leachate (in situ) <input type="checkbox"/> Other <input type="checkbox"/> Aqueous sample (ex situ) <input type="checkbox"/> Ground water (in situ) <input type="checkbox"/> Soil gas <input type="checkbox"/> Air vapors <input type="checkbox"/> Dense nonaqueous phase liquids (DNAPL) [in situ] <input type="checkbox"/> Light nonaqueous phase liquids (LNAPL) [in situ] <input type="checkbox"/> Surface water (in situ)	
Measurements		
Number per day _____ Total _____	Equipment Scale (Check one only) <input type="checkbox"/> Full-Scale <input type="checkbox"/> Pilot-Scale	Project Status <input type="checkbox"/> Ongoing <input type="checkbox"/> Completed Completion Date: Month (MM) _____ Year (YYYY) _____

Vendor Name _____
Technology Type _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

5.2

Site Name or Industry Type if Client Identity is Confidential: _____		
Site Type or Waste Source (Check all that apply)		
<input type="checkbox"/> Agriculture <input type="checkbox"/> Battery recycling/disposal <input type="checkbox"/> Chloro-alkali manufacturing <input type="checkbox"/> Coal gasification <input type="checkbox"/> Dry cleaning <input type="checkbox"/> Electroplating <input type="checkbox"/> Gasoline service station/petroleum storage facility <input type="checkbox"/> Herbicide manufacturing/use	<input type="checkbox"/> Industrial landfills <input type="checkbox"/> Inorganic/organic pigments <input type="checkbox"/> Machine shops <input type="checkbox"/> Medical waste <input type="checkbox"/> Metal ore mining and smelting <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Munitions Manufacturing <input type="checkbox"/> Paint/ink formulation <input type="checkbox"/> Pesticide manufacturing/use <input type="checkbox"/> Petroleum refining and reuse <input type="checkbox"/> Photographic products <input type="checkbox"/> Plastics manufacturing	<input type="checkbox"/> Pulp and paper industry <input type="checkbox"/> Other organic chemical manufacturing <input type="checkbox"/> Other inorganic chemical manufacturing <input type="checkbox"/> Semiconductor manufacturing <input type="checkbox"/> Rubber manufacturing <input type="checkbox"/> Wood preserving <input type="checkbox"/> Uranium mining <input type="checkbox"/> Others (specify) _____
Location	Application or Project Type (Check all that apply)	
City _____ State/Province: _____ Country _____ Zip Code _____	<input type="checkbox"/> Full-Scale <input type="checkbox"/> Field Demonstration <input type="checkbox"/> Bench-Scale Study <input type="checkbox"/> TSCA National Demonstration <input type="checkbox"/> TSCA Research and Development <input type="checkbox"/> CSCT Verification Program <input type="checkbox"/> EPA SITE Characterization and Monitoring Program <input type="checkbox"/> Research <input type="checkbox"/> Other (specify): _____	
Regulation/Statute/Organization (Check all that apply)	Media (Check all that apply)	
<input type="checkbox"/> RCRA Corrective Action <input type="checkbox"/> CERCLA <input type="checkbox"/> TSCA <input type="checkbox"/> Safe Drinking Water Act <input type="checkbox"/> UST Corrective Action <input type="checkbox"/> State (specify) _____ <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Not Applicable	<input type="checkbox"/> Soil (in situ) <input type="checkbox"/> Soil (ex situ) <input type="checkbox"/> Sludge <input type="checkbox"/> Solid <input type="checkbox"/> Natural sediment (in situ) <input type="checkbox"/> Natural sediment (ex situ) <input type="checkbox"/> Air particulates and aerosols <input type="checkbox"/> Leachate (in situ) <input type="checkbox"/> Other <input type="checkbox"/> Aqueous sample (ex situ) <input type="checkbox"/> Ground water (in situ) <input type="checkbox"/> Soil gas <input type="checkbox"/> Air vapors <input type="checkbox"/> Dense nonaqueous phase liquids (DNAPL) [in situ] <input type="checkbox"/> Light nonaqueous phase liquids (LNAPL) [in situ] <input type="checkbox"/> Surface water (in situ)	
Measurements	Equipment Scale (Check one only)	Project Status
Number per day _____ Total _____	<input type="checkbox"/> Full-Scale <input type="checkbox"/> Pilot-Scale	<input type="checkbox"/> Ongoing <input type="checkbox"/> Completed Completion Date: Month (MM) _____ Year (YYYY) _____

Vendor Name _____

Technology Type _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

- Note:**
- (1) List one specific contaminant per line. Do not list such entire contaminant groups as VOCs or solvents. TPH, which can be analyzed using a specific test method, can be listed as an individual contaminant.
 - (2) Indicate the sample matrix. Refer to question 2.17.
 - (3) Indicate the method detection limit. Indicate a range if the MDL can vary.
 - (4) The concentration range is the range of concentrations over which the technology was capable of operating for this project.
 - (5) Include all related costs necessary to set up, read, record, and compute measurement.

Performance Data					
(1) Contaminant or Pollutant Parameter	(2) Matrix	(3) Method Detection Limits (Min. to Max.)	Units	(4) Concentration Range	Units
(Example) Benzene	Soil	25 - 50	ppm	10 - 100	ppm
Conditions or interference adversely affecting performance _____ _____					
Cost Information (5)					
Estimated or actual total cost of using this technology for this project \$ _____ (total)		What items or activities are included in these cost(s) (e.g., mobilization, demobilization, excavation, waste handling)? _____ _____			
Person outside of company familiar with project (optional) Name _____ Company _____ Address _____ Phone _____				Is Literature Available on this Project? (You may wish to include these citations in Part 6) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Additional project information site conditions, mode of operation, derivation of accuracy and precision, and other pertinent information). _____ _____ _____					

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

5.3

Site Name or Industry Type if Client Identity is Confidential: _____		
Site Type or Waste Source (Check all that apply)		
<input type="checkbox"/> Agriculture <input type="checkbox"/> Battery recycling/disposal <input type="checkbox"/> Chloro-alkali manufacturing <input type="checkbox"/> Coal gasification <input type="checkbox"/> Dry cleaning <input type="checkbox"/> Electroplating <input type="checkbox"/> Gasoline service station/petroleum storage facility <input type="checkbox"/> Herbicide manufacturing/use	<input type="checkbox"/> Industrial landfills <input type="checkbox"/> Inorganic/organic pigments <input type="checkbox"/> Metal Machine shops <input type="checkbox"/> Medical waste <input type="checkbox"/> Metal ore mining and smelting <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Munitions Manufacturing <input type="checkbox"/> Paint/ink formulation <input type="checkbox"/> Pesticide manufacturing/use <input type="checkbox"/> Petroleum refining and reuse <input type="checkbox"/> Photographic products <input type="checkbox"/> Plastics manufacturing	<input type="checkbox"/> Pulp and paper industry <input type="checkbox"/> Other organic chemical manufacturing <input type="checkbox"/> Other inorganic chemical manufacturing <input type="checkbox"/> Semiconductor manufacturing <input type="checkbox"/> Rubber manufacturing <input type="checkbox"/> Wood preserving <input type="checkbox"/> Uranium mining <input type="checkbox"/> Others (specify) _____
Location		
City _____ State/Province: _____ Country _____ Zip Code _____	Application or Project Type (Check all that apply) <input type="checkbox"/> Full-Scale <input type="checkbox"/> Field Demonstration <input type="checkbox"/> Bench-Scale Study <input type="checkbox"/> TSCA National Demonstration <input type="checkbox"/> TSCA Research and Development <input type="checkbox"/> CSCT Verification Program <input type="checkbox"/> EPA SITE Characterization and Monitoring Program <input type="checkbox"/> Research <input type="checkbox"/> Other (specify): _____	
Regulation/Statute/Organization (Check all that apply)		
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Measurements		
Number per day _____ Total _____	Equipment Scale (Check one only) <input type="checkbox"/> Full-Scale <input type="checkbox"/> Pilot-Scale	Project Status <input type="checkbox"/> Ongoing <input type="checkbox"/> Completed Complete Date: Month (MM) _____ Year (YYYY) _____

Vendor Name _____

Technology Type _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

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- (1) List one specific contaminant per line. Do not list such entire contaminant groups as VOCs or solvents. TPH, which can be analyzed using a specific test method, can be listed as an individual contaminant.
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 - (5) Include all related costs necessary to set up, read, record, and compute measurement.

[illegible]

Vendor Name _____
Technology Type _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

5.4

Site Name or Industry Type if Client Identity is Confidential: _____		
Site Type or Waste Source (Check all that apply)		
<input type="checkbox"/> Agriculture <input type="checkbox"/> Battery recycling/disposal <input type="checkbox"/> Chloro-alkali manufacturing <input type="checkbox"/> Coal gasification <input type="checkbox"/> Dry cleaning <input type="checkbox"/> Electroplating <input type="checkbox"/> Gasoline service station/petroleum storage facility <input type="checkbox"/> Herbicide manufacturing/use	<input type="checkbox"/> Industrial landfills <input type="checkbox"/> Inorganic/organic pigments <input type="checkbox"/> Machine shops <input type="checkbox"/> Medical waste <input type="checkbox"/> Metal ore mining and smelting <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Munitions Manufacturing <input type="checkbox"/> Paint/ink formulation <input type="checkbox"/> Pesticide manufacturing/use <input type="checkbox"/> Petroleum refining and reuse <input type="checkbox"/> Photographic products <input type="checkbox"/> Plastics manufacturing	<input type="checkbox"/> Pulp and paper industry <input type="checkbox"/> Other organic chemical manufacturing <input type="checkbox"/> Other inorganic chemical manufacturing <input type="checkbox"/> Semiconductor manufacturing <input type="checkbox"/> Rubber manufacturing <input type="checkbox"/> Wood preserving <input type="checkbox"/> Uranium mining <input type="checkbox"/> Others (specify) _____
Location		
City _____ State/Province: _____ Country _____ Zip Code _____	Application or Project Type (Check all that apply) <input type="checkbox"/> Full-Scale <input type="checkbox"/> Field Demonstration <input type="checkbox"/> Bench-Scale Study <input type="checkbox"/> TSCA National Demonstration <input type="checkbox"/> TSCA Research and Development <input type="checkbox"/> CSCT Verification Program <input type="checkbox"/> EPA SITE Characterization and Monitoring Program <input type="checkbox"/> Research <input type="checkbox"/> Other (specify): _____	
Regulation/Statute/Organization (Check all that apply)		
<input type="checkbox"/> RCRA Corrective Action <input type="checkbox"/> CERCLA <input type="checkbox"/> TSCA <input type="checkbox"/> Safe Drinking Water Act <input type="checkbox"/> UST Corrective Action <input type="checkbox"/> State (specify) _____ <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Not Applicable	Media (Check all that apply) <input type="checkbox"/> Soil (in situ) <input type="checkbox"/> Soil (ex situ) <input type="checkbox"/> Sludge <input type="checkbox"/> Solid <input type="checkbox"/> Natural sediment (in situ) <input type="checkbox"/> Natural sediment (ex situ) <input type="checkbox"/> Air particulates and aerosols <input type="checkbox"/> Leachate (in situ) <input type="checkbox"/> Other <input type="checkbox"/> Aqueous sample (ex situ) <input type="checkbox"/> Ground water (in situ) <input type="checkbox"/> Soil gas <input type="checkbox"/> Air vapors <input type="checkbox"/> Dense nonaqueous phase liquids (DNAPL) [in situ] <input type="checkbox"/> Light nonaqueous phase liquids (LNAPL) [in situ] <input type="checkbox"/> Surface water (in situ)	
Measurements	Equipment Scale (Check one only)	Project Status
Number per day _____ Total _____	<input type="checkbox"/> Full-Scale <input type="checkbox"/> Pilot-Scale	<input type="checkbox"/> Ongoing <input type="checkbox"/> Completed Completion Date: Month (MM) _____ Year (YYYY) _____

Vendor Name _____

Technology Type _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

- Note:**
- (1) List one specific contaminant per line. Do not list such entire contaminant groups as VOCs or solvents. TPH, which can be analyzed using a specific test method, can be listed as an individual contaminant.
 - (2) Indicate the sample matrix. Refer to question 2.17.
 - (3) Indicate the method detection limit. Indicate a range if the MDL can vary.
 - (4) The concentration range is the range of concentrations over which the technology was capable of operating for this project.
 - (5) Include all related costs necessary to set up, read, record, and compute measurement.

Performance Data					
(1) Contaminant or Pollutant Parameter	(2) Matrix	(3) Method Detection Limits (Min. to Max.)	Units	(4) Concentration Range	Units
(Example) Benzene	Soil	25 - 50	ppm	10 - 100	ppm

Conditions or interference adversely affecting performance _____

Cost Information (5)

Estimated or actual total cost of using this technology for this project \$ _____ (total)	What items or activities are included in these cost(s) (e.g., mobilization, demobilization, excavation, waste handling)? _____ _____
--	--

Person outside of company familiar with project (optional) Name _____ Company _____ Address _____ _____ Phone _____	Is Literature Available on this Project? (You may wish to include these citations in Part 6) <input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

Additional project information site conditions, mode of operation, derivation of accuracy and precision, and other pertinent information). _____

PART 5: REPRESENTATIVE APPLICATIONS, CLIENT REFERENCES, AND PERFORMANCE DATA
(continued)

5.5

Site Name or Industry Type if Client Identity is Confidential: _____		
Site Type or Waste Source (Check all that apply)		
<input type="checkbox"/> Agriculture <input type="checkbox"/> Battery recycling/disposal <input type="checkbox"/> Chloro-alkali manufacturing <input type="checkbox"/> Coal gasification <input type="checkbox"/> Dry cleaning <input type="checkbox"/> Electroplating <input type="checkbox"/> Gasoline service station/petroleum storage facility <input type="checkbox"/> Herbicide manufacturing/use	<input type="checkbox"/> Industrial landfills <input type="checkbox"/> Inorganic/organic pigments <input type="checkbox"/> Machine shops <input type="checkbox"/> Medical waste <input type="checkbox"/> Metal ore mining and smelting <input type="checkbox"/> Municipal Landfill <input type="checkbox"/> Munitions Manufacturing <input type="checkbox"/> Paint/ink formulation <input type="checkbox"/> Pesticide manufacturing/use <input type="checkbox"/> Petroleum refining and reuse <input type="checkbox"/> Photographic products <input type="checkbox"/> Plastics manufacturing	<input type="checkbox"/> Pulp and paper industry <input type="checkbox"/> Other organic chemical manufacturing <input type="checkbox"/> Other inorganic chemical manufacturing <input type="checkbox"/> Semiconductor manufacturing <input type="checkbox"/> Rubber manufacturing <input type="checkbox"/> Wood preserving <input type="checkbox"/> Uranium mining <input type="checkbox"/> Others (specify) _____
Location		
City _____	Application or Project Type (Check all that apply)	
State/Province: _____	<input type="checkbox"/> Full-Scale <input type="checkbox"/> Field Demonstration <input type="checkbox"/> Bench-Scale Study <input type="checkbox"/> TSCA National Demonstration <input type="checkbox"/> TSCA Research and Development <input type="checkbox"/> CSCT Verification Program <input type="checkbox"/> EPA SITE Characterization and Monitoring Program	
Country _____	<input type="checkbox"/> Research <input type="checkbox"/> Other (specify): _____	
Zip Code _____		
Regulation/Statute/Organization (Check all that apply)		
<input type="checkbox"/> RCRA Corrective Action <input type="checkbox"/> CERCLA <input type="checkbox"/> TSCA <input type="checkbox"/> Safe Drinking Water Act <input type="checkbox"/> UST Corrective Action <input type="checkbox"/> State (specify) _____ <input type="checkbox"/> DOD <input type="checkbox"/> DOE <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Not Applicable	Media (Check all that apply)	
	<input type="checkbox"/> Soil (in situ) <input type="checkbox"/> Soil (ex situ) <input type="checkbox"/> Sludge <input type="checkbox"/> Solid <input type="checkbox"/> Natural sediment (in situ) <input type="checkbox"/> Natural sediment (ex situ) <input type="checkbox"/> Air particulates and aerosols <input type="checkbox"/> Leachate (in situ) <input type="checkbox"/> Other	<input type="checkbox"/> Aqueous sample (ex situ) <input type="checkbox"/> Ground water (in situ) <input type="checkbox"/> Soil gas <input type="checkbox"/> Air vapors <input type="checkbox"/> Dense nonaqueous phase liquids (DNAPL) [in situ] <input type="checkbox"/> Light nonaqueous phase liquids (LNAPL) [in situ] <input type="checkbox"/> Surface water (in situ)
Measurements		
Number per day _____	Equipment Scale (Check one only)	Project Status
Total _____	<input type="checkbox"/> Full-Scale <input type="checkbox"/> Pilot-Scale	<input type="checkbox"/> Ongoing <input type="checkbox"/> Completed Completion Date: Month (MM) _____ Year (YYYY) _____

Technology Type

Note:

- (1) List one specific contaminant per line. Do not list such entire contaminant groups as VOCs or solvents. TPH, which can be analyzed using a specific test method, can be listed as an individual contaminant.
- (2) Indicate the sample matrix. Refer to question 2.17.
- (3) Indicate the method detection limit. Indicate a range if the MDL can vary.
- (4) The concentration range is the range of concentrations over which the technology was capable of operating for this project.
- (5) Include all related costs necessary to set up, read, record, and compute measurement.

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Vendor Name _____
Technology Type _____

PART 6: LITERATURE AND TECHNICAL REFERENCES

- 6.1. List and attach available documentation (for example, journal articles, conference papers, patents) that best describes technology and vendor capabilities. References that contain performance and cost data are of particular interest. **Do not include personal references.** EPA reserves the right to add to the list other publicly available references.

Author(s) _____

Title _____

Journal/Conference _____

Date _____ NTIS/EPA Document Number(s) _____

Author(s) _____

Title _____

Journal/Conference _____

Date _____ NTIS/EPA Document Number(s) _____

Author(s) _____

Title _____

Journal/Conference _____

Date _____ NTIS/EPA Document Number(s) _____

Author(s) _____

Title _____

Journal/Conference _____

Date _____ NTIS/EPA Document Number(s) _____

Author(s) _____

Title _____

Journal/Conference _____

Date _____ NTIS/EPA Document Number(s) _____

Author(s) _____

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APPENDIX A

BUSINESS CLASSIFICATION INFORMATION

The following information is intended to be used as a reference to answer question 1.4. SIC code information and definitions are given below. To determine if your company is a small and/or disadvantaged business, first identify the Standard Industrial Classification (SIC) code for your company and secondly identify whether your company qualifies as a small business under that SIC code. Small and disadvantaged businesses are defined below.

Definition of SIC Code

Standard Industrial Classification (SIC) Code - refers to the four-digit number assigned by the government to classify establishments by the type of activity in which they are engaged. The codes are published by the Government in the Standard Industrial Classification Manual. The Manual is intended to cover the entire field of economic activities. It classifies and defines activities by industry categories and is the source used by the Small Business Administration (SBA) as a guide in defining industries for size standards. The number of employees or annual receipts indicates the maximum allowed for a concern, including its affiliates, to be considered small (Federal Acquisition Circular (FAC) 90-43, Interim Rule 61, Federal Register (FR) 67408, December 20, 1996, Federal Acquisition Regulation (FAR), 19.102(g)).

Most remediation firms should fall under one of the SIC codes defined below.

The following SIC code definitions are taken from the Standard Industrial Classification Manual, 1987, Office of Management and Budget.

SIC code 4953: Refuse Systems (i.e., activities related to actual site cleanup) Establishments primarily engaged in the collection and disposal of refuse by processing or destruction or in the operation of incinerators, waste treatment plants, landfills, or other sites for disposal of such materials. Establishments primarily engaged in collecting and transporting refuse without such disposal are classified in Transportation, Industry 4212.

- | | |
|---|--|
| • Acid waste, collection and disposal of | • Landfill, sanitary: operation of |
| • Ashes, collection and disposal of | • Radioactive waste materials, disposal of |
| • Dumps, operation of | • Refuse systems |
| • Garbage: collecting, destroying, and processing | • Rubbish collection and disposal |
| • Hazardous waste material disposal sites | • Sludge disposal sites |
| • Incinerator operation | • Street refuse systems |
| | • Waste materials disposal at sea |

SIC code 8711: Engineering Services (i.e., activities related to remedial investigations, feasibility studies, and remedial design) Establishments primarily engaged in providing professional engineering services. Establishments primarily providing and supervising their own engineering staff on temporary contract to other firms are included in this industry. Establishments providing engineering personnel, but not general supervision, are classified in Industry 7363. Establishments primarily engaged in providing architectural engineering services are classified in Industry 8712, and those providing photogrammetric engineering services are classified in Industry 8713.

- Designing ship, boat, and machine
- Engineering services: industrial, civil, electrical, mechanical, petroleum, marine, and design
- Machine tool designers
- Marine engineering services
- Petroleum engineering services

Definitions of Small and Disadvantaged Business

The following small business size standards established by the SBA are taken from FAR 19.102.

SIC Code	Description	Size
4953	Refuse Systems	\$6.0 million
8711	Engineering Services	
	Military and Aerospace Equipment	
	and Military Weapons	\$20.0 million
	Marine Engineering and Naval Architecture	\$13.5 million
	Other Engineering Services	\$2.5 million

The following information is taken from FAR Parts 19-26, Socioeconomic Programs

Small business concern - means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on government contracts, and qualified as a small business under the criteria and size standards in 13 CFR Part 121 (FAR Section 19.102). Such a concern is "not dominant in its field of operation" when it does not exercise a controlling or major influence on a national basis in a kind of business activity in which a number of business concerns are primarily engaged. In determining whether dominance exists, consideration shall be given to all appropriate factors, including volume of business, number of employees, financial resources, competitive status or position, ownership or control of materials, processes, patents, license agreements, facilities, sales territory, and nature of business activity.

Small disadvantaged business concern - means a small business concern that is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business that has at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals and that has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business that has at least 51 percent of its stock unconditionally owned by one of these entities, that has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and that meets the requirements of 13 CFR 124.

(a) "Socially disadvantaged individuals" means individuals who have been subjected to racial or ethnic prejudice or cultural bias because of their identify as a member of a group without regard to their qualities as individuals.

(b) "Economically disadvantaged individuals" means socially disadvantaged individuals whose ability to compete in the free enterprise system is impaired due to diminished opportunities to obtain capital and credit as compared to others in the same line of business who are not socially disadvantaged.

Individuals who certify that they are members of named groups (Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent-Asian Americans) are to be considered socially and economically disadvantaged.

(1) "Subcontinent Asian Americans" means United States citizens whose origins are in India, Pakistan, Bangladesh, Sri Lanka, Bhutan, or Nepal.

(2) "Asian Pacific Americans" means United States citizens whose origins are in Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands (Republic of Palau), the Northern Mariana Islands, Laos, Kampuchea (Cambodia), Taiwan, Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Republic of the Marshall Islands, or the Federated States of Micronesia.

(3) "Native Americans" means American Indians, Eskimos, Aleuts, and Native Hawaiians.

(c) "Native Hawaiian Organization" means any community service organization serving Native Hawaiians in, and chartered as a not-for-profit organization by, the State of Hawaii, which is controlled by Native Hawaiians, and whose business activities will principally benefit such Native Hawaiians.

(d) "Indian tribe" means any Indian tribe, band, nation, or other organized group or community of Indians, including any Alaska Native Corporation as defined in 13 CFR 124.100 which is recognized as eligible for the special programs and services provided by the U.S. to Indians because of their status as Indians, or which is recognized as such by the State in which such tribe, band, nation, group, or community resides.

Women-owned small business concern - means a small business concern which is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

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APPENDIX B
KEY TO CONTAMINANT GROUPS

CONTAMINANT GROUP CODES FOR HAZARDOUS SUBSTANCES LIST

Organic

- A** Halogenated volatiles
- B** Halogenated semivolatiles
- C** Nonhalogenated volatiles
- D** Nonhalogenated semivolatiles
- E** Organic pesticides/herbicides
- F** Dioxins/furans
- G** PCBs
- H** Polynuclear aromatics (PNAs)
- I** Solvents
- J** Benzene-toluene-ethylbenzene-xylene (BTEX)
- K** Organic cyanide
- L** Organic corrosives

Inorganic

- M** Heavy metals
- N** Nonmetallic toxic elements (As, F)
- O** Radioactive metals
- P** Asbestos
- Q** Inorganic cyanides
- R** Inorganic corrosives

Miscellaneous

- S** Explosives/propellants
- T** Organometallic pesticides/herbicides

HAZARDOUS SUBSTANCES

Organic Contaminant Group

CAS No.

208968	Acenaphthylene	D,H
83329	Acenaphthene	D,H
75070	Acetaldehyde	C
67641	Acetone	C,I
75058	Acetonitrile	C,K
98862	Acetophenone	D
591082	Acetyl-2-thiourea, 1	D
107028	Acrolein	C
79061	Acrylamide	D
79107	Acrylic acid	CL
107131	Acrylonitrile	C
124049	Adipic acid	L
116063	Aldicarb	E
309002	Aldrin	E
107186	Allyl alcohol	E
62533	Aniline	D,I,L
120127	Anthracene	D,H
1912249	Atrazine	E
2642719	Azinphos-ethyl	E
86500	Azinphos-methyl	E
151564	Aziridine	C
71432	Benzene	C,I,J
98884	Benzene carbonyl chloride	B
92875	Benzidine	D
205992	Benzofluoranthene,3,4-	H
65850	Benzoic acid	D,L
100470	Benzonitrile	C,I
95169	Benzothiazole,1,2-	D,I
50328	Benzo (a) pyrene	D,H
206440	Benzo (j,k) fluorene	H
207089	Benzo (k) fluoranthene	D,H
100447	Benzyl chloride	A
56553	Benz (a) anthracene	D,H
117817	Bis (2-ethyl hexyl) phthalate	D
111911	Bis (2-chloroethoxy) methane	B
111444	Bis (2-chloroethyl) ether	B
542881	Bis (chloromethyl) ether	B
75274	Bromodichloromethane	A
74964	Bromomethane	A
1689845	Bromoxynil	E
106990	Butadiene, 1,3-	C

CAS No.

71363	Butanol	C
85687	Butylbenzyl phthalate	D
94826	Butyric acid, 4-2(2,4-dichlorop)	C,L
133062	Captan	B
63252	Carbaryl	E
1563662	Carbofuran	E,F
75150	Carbon disulfide	C
56235	Carbon tetrachloride	A
78196	Carbophenothion	E
75876	Chloral	A
57749	Chlordane	E
106478	Chloroaniline, p-	B
108907	Chlorobenzene	A
67663	Chloroform	A
74873	Chloromethane	A
107302	Chloromethyl methyl ether	A
106898	Chloromethyloxirane, 2-	E
91587	Chloronaphthalene, 2-	B
95578	Chlorophenol, 2-	B
59507	Chloro-3-methylphenol, 4-	B
2921882	Chlorpyrifos	E
218019	Chrysene	D,H
56724	Coumaphos	E
8021394	Creosote	H
108394	Cresol, m-	D
106445	Cresol, p-	D
98828	Cumene	C,I
21725462	Cyanazine	E
110827	Cyclohexane	C,I
108941	Cyclohexanone	C
72548	DDD	E
72559	DDE	E
50293	DDT	E
78488	DEF	C,E
333415	Diazinon	E
132649	Dibenzofuran	D
53703	Dibenz (a,h) anthracene	D,H
124481	Dibromachloromethane	A
106934	Dibromoethane, 1,2-	A
96128	Dibromo-3-chloropropane, 1,2-	A
1918009	Dicamba	E

Organic Contaminant Group (continued)**CAS No.**

95501	Dichlorobenzene, 1,2-	B
541731	Dichlorobenzene, 1,3-	B
106467	Dichlorobenzene, 1,4-	B
91941	Dichlorobenzidine, 3,3-	B
75718	Dichlorodifluoromethane	A
75343	Dichloroethane, 1,1-	A
107062	Dichloroethane, 1,2-	A
75354	Dichloroethene, 1,1-	A
156592	Dichloroethylene, cis-1,2-	A
156605	Dichloroethylene, trans-1,2-	A
120832	Dichlorophenol, 2,4-	B
94757	Dichlorophenoxyacetic acid, 2- ..	L
78875	Dichloropropane, 1,2-	A
542756	Dichloropropene, 1,3-	A
62737	Dichlorvos	E
115322	Dicofol	E
60571	Dieldrin	E
84662	Diethyl phthalate	D
111466	Diethylene glycol	D,I
1660942	Diisopropylmethylphosphonate ..	D
60515	Dimethoate	E
119904	Dimethoxybenzidine, 3,3-	D
105679	Dimethyl phenol, 2,4-	D
13113	Dimethyl phthalate	D
77781	Dimethyl sulfate	C
99650	Dinitrobenzene, 1,3-	D
51285	Dinitrophenol, 2,4-	D
121142	Dinitrotoluene, 2,4-	D
606202	Dinitrotoluene, 2,6-	D
88857	Dinoseb	E
123911	Dioxane, 1,4	C
78342	Dioxathion	E
122667	Diphenylhydrazine, 1,2-	D,H
85007	Diquat	E
298044	Disulfoton	C,E
330541	Diuron	E
84742	Di-n-butyl phthalate	D
117840	Di-n-octyl phthalate	D
115297	Endosulfan	E
959988	Endosulfan	I
33212659	Endosulfan II	E

CAS No.

1031078	Endosulfan sulfate	E
145733	Endothall	E
72208	Endrin	E
7421934	Endrin aldehyde	E
563122	Ethion	E
141786	Ethyl acetate	C
100414	Ethyl benzene	C,J
75003	Ethyl chloride	A,I
60297	Ethyl ether	C
107211	Ethylene glycol	I
110805	Ethylene glycol monoethyl ether	C,I
759944	Ethylpropylthio carbamate, S- ...	E
122145	Fenitrothion	E
86737	Fluorene	D,H
50000	Formaldehyde	C
64186	Formic acid	L
110009	Furan	F
98011	Furfural	I,C
765344	Glycidyaldehyde	G
76448	Heptachlor	E
1024573	Heptachlor epoxide	E
118741	Hexachlorobenzene	B
87683	Hexachlorobutadiene	B
60873	Hexachlorocyclohexane, alpha- ..	E
60873	Hexachlorocyclohexane, beta- ...	E
60873	Hexachlorocyclohexane, delta- ..	E
77474	Hexachlorocyclopentadiene	B
67721	Hexachloroethane	B
70304	Hexachlorophene	B
110543	Hexane	C,I
1689834	Ioxynil	E
78831	Isobutanol	C
78591	Isophorone	D
143500	Kepone	E

Organic Contaminant Group (continued)

<u>CAS No.</u>			<u>CAS No.</u>		
58899	Lindane	E	298022	Phorate	C,E
121755	Malathion	C,E	75445	Phosgene	E
108316	Maleic anhydride	E	13171216	Phosphamidon	E
123331	Maleric hydrazide	E	7803512	Phosphine	E
126987	Methacrylonitrile	C	85449	Phthalic anhydride	D,E
67561	Methanol	C	23950585	Pronamide	D
16752775	Methomyl	E	129000	Pyrene	D,H
72435	Methoxychlor	E	110861	Pyridine	C,I
79221	Methyl chlorocarbonate	L	91225	Quinoline	D,H
78933	Methyl ethyl ketone	C	108463	Resorcinol	D
108101	Methyl isobutyl ketone	C,I	299843	Ronnel	E
80626	Methyl methacrylate	C	57249	Strychnine	E,H
101144	Methylene bis (2-chloroaniline)	B	100425	Styrene	C
75092	Methylene chloride	A	746016	TCDD	F
23855	Mirex	E	95943	Tetrachlorobenzene, 1,2,4,5-	B
91203	Naphthalene	D,H	630206	Tetrachloroethane, 1,1,1,2-	A,E,I
100016	Nitroaniline, p-	D	79345	Tetrachloroethane, 1,1,2,2-	A
98953	Nitrobenzene	D	127184	Tetrachloroethene	A
100027	Nitrophenol, 4-	D	58902	Tetrachlorophenol, 2,3,4,6	B
1116547	Nitrosodiethanolamine, n-	D	3689245	Tetraethyldithiopyrophosphate ...	E
55185	Nitrosodiethylamine, n-	D	109999	Tetrahydrofuran	F,I
62759	Nitrosodimethylamine, n-	D	137268	Thiram	E
86306	Nitrosodiphenylamine, n-	D	108883	Toluene	C,J
930552	Nitrosopyrrolidine, n-	D	584849	Toluene diisocyanate	D
924163	Nitroso-di-n-butylamine, n-	D	8001352	Toxaphene	E
615532	Nitroso-di-n-methylurethane, n- .	D	93721	TP, 2,4,5-	E
99990	Nitrotoluene, 4-	D	75252	Tribromomethane	A
56382	Parathion, ethyl-	E	120821	Trichlorobenzene, 1,2,4-	B
298000	Parathion, methyl-	E	71556	Trichloroethane, 1,1,1-	A
1336363	PCBs	G	79005	Trichloroethane, 1,1,2-	A
608935	Pentachlorobenzene	B	79016	Trichloroethylene	A
76017	Pentachloroethane	B	75694	Trichlorofluoromethane	A
82688	Pentachloronitrobenzene	B	933788	Trichlorophenol, 2,3,5-	B
87865	Pentachlorophenol	B	95954	Trichlorophenol, 2,4,5-	B
85018	Phenanthrene	D,H	88062	Trichlorophenol, 2,4,6-	B
108952	Phenol	D	609198	Trichlorophenol, 3,4,5-	B
139662	Phenyl sulfide	D	93765	Trichlorophenoxyacetic acid, 2- ..	L
62384	Phenylmercuric acetate	E	933788	Trichloro-1,2,2-trifluoroethane ..	A,I
			27323417	Triethanolamine	E

CAS No.

126727 Tris (2,3-dibromopropyl)
phosphate B

108054 Vinyl acetate C

75014 Vinyl chloride A

81812 Warfarin E

108383 Xylene, m- C,J

95476 Xylene, o- C,J

106423 Xylene, p- C,J

Inorganic Contaminant Group**CAS No.**

7429905 Aluminum M

20859738 Aluminum phosphide M

7440360 Antimony M

7440382 Arsenic M

1327533 Arsenic trioxide M

1303339 Arsenic trisulfide M

7440393 Barium M

542621 Barium cyanide M,Q

7440417 Beryllium M

7440439 Cadmium M

13765190 Calcium chromate M

7778543 Calcium hypochlorite M

1333820 Chromic acid M,R

7440473 Chromium M

Chromium (III) M

Chromium (VI) M

7440484 Cobalt M

7440508 Copper M

544923 Copper cyanide M,Q

7720787 Ferrous sulfate M

7439896 Iron M

7439921 Lead M

CAS No.

7439965 Manganese M

7439976 Mercury M

7440020 Nickel M

7718549 Nickel chloride M

10102440 Nitrogen dioxide R

7789006 Potassium chromate M

151508 Potassium cyanide M,Q

506616 Potassium silver cyanide M,Q

7783008 Selenious acid M,R

7782492 Selenium M

7440224 Silver M

506649 Silver cyanide M,Q

7440235 Sodium M

26628228 Sodium azide M

7681494 Sodium fluoride M

7775113 Sodium chromate M

143339 Sodium cyanide M,Q

1310732 Sodium hydroxide M,R

7440280 Thallium M

1314325 Thallic oxide M

563688 Thallium acetate M

6533739 Thallium carbonate M

7791120 Thallium chloride M

10102451 Thallium nitrate M

12039520 Thallium selenide M

7446186 Thallium (I) sulfate M

7440291 Thorium M

1314621 Vanadium pentoxide M

7440666 Zinc M

557211 Zinc cyanide M,Q

1314847 Zinc phosphide M

7733020 Zinc sulfate M

Explosive/Propellants

CAS No.

7664417	Ammonia	S
131748	Ammonium picrate	S
7773060	Ammonium sulfamate	S
460195	Cyanogen	S
2691410	Cyclotetramethylenetetranitramine	S
302012	Hydrazine	S
55630	Nitroglycerine	S
99990	Nitrotoluene, 4-	S
26628228	Sodium azide	M,S
99354	Trinitrobenzene, 1,3,5	S
118967	Trinitrotoluene	S

Organometallic Compound

CAS No.

630104	Selenourea	U
78002	Tetraethyl lead	U



United States
Environmental Protection Agency
(5102G)
Washington, DC 20460

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